

REMARKS

Claims 1 and 6 have been cancelled without prejudice and claims 7 and 8 have been added and the dependency of claims 2-5 inclusive has been changed to depend from Claim 7.

Applicant's attorney wishes to thank the Examiner for the courtesy and assistance during a recent Interview regarding this case. The above amendments of claims now pending and how they set forth Applicant's invention in terms which distinguish it patentably over the prior art of record as acknowledged by the Examiner in the Interview Summary Record were discussed in detail with the Examiner at the Interview. Favorably consideration leading to passage of this case to issue is respectfully solicited.

Applicant's invention related to a so-called vacuum pick-up apparatus for handling delicate and expensive chip wafers. In the device of the present invention, air is drawn through an orifice in the paddle and create a first vacuum on the lower pick-up face of the paddle and also directs air over the top surface of the paddle to provide an additional secondary lifting force around the periphery of the paddle whereby the wafer is gently supported on the pick-up surface. This flow arrangement essentially distributes a low vacuum over a large area of the pick-up surface to provide a good and more even lifting force.

The device of the present invention provides lift over a large air by the action of the impeller drawing air upwardly through the orifice and discharging a portion over the top face of the paddle to create the secondary vacuum at the peripheral edge of the paddle. The exhausting air creates additional negative pressure at the outside edges of the paddle by the Bernoulli effect much like the lift created in aircraft when air passes over the top surface of the wing. Thus the holding force is distributed more evenly and is the equivalent of other

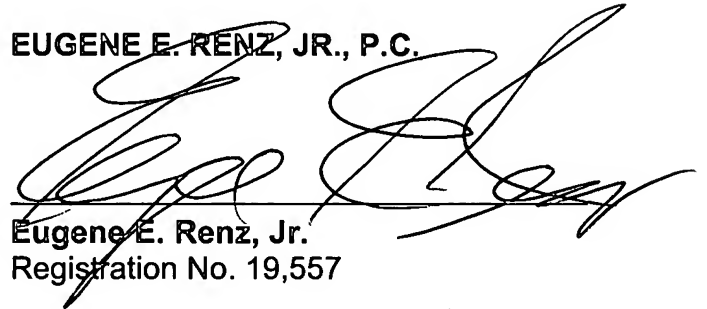
systems utilizing high vacuum over a small area such as in the prior art references of record such as Logue, U.S. Patent No. 3,523,706, Palmer, U.S. Patent No. 5,290,082 and Baan, et al., U.S. Patent No.: 5,971,454 without the harmful effects of high vacuum systems on fragile wafers.

The prior art systems do not teach or suggest circulating the air by the fashion described to produce the beneficial effect discussed above. The use of both the intake and exhausting air produces a very efficient pick-up tool.

Favorable reconsideration leading to passage of the case to issue is respectfully solicited. If there are additional matters requiring attention, Applicant's attorney respectfully requests the Examiner to call by phone to expedite prosecution of this case.

Respectfully submitted,

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